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THE

MEDICAL EXAMINER'S

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MANUAL.

D. S. [✓]GLONINGER, M.D.



PHILADELPHIA:

CLAXTON, REMSEN, AND HAFFELFINGER,

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IS RESPECTFULLY DEDICATED

TO

HON. HENRY CROCKER, PRESIDENT

UNION MUTUAL LIFE INSURANCE COMPANY,

BOSTON.



THE MEDICAL EXAMINER.

THE success of life insurance companies depends principally upon the character of risks taken; the stability of investments upon the financial capacities of the officers. A rigid scrutiny into the competency of each class is the only guarantee to the policy-holder that his money will accrue to the benefit of his or her legatees, when the time comes to cancel obligations.

Proficiency in medical diagnosis and strict integrity are requisites in the selection of medical examiners.

We lay stress upon diseases of the lungs and heart primarily, but we would not give a secondary position to organs as much concerned in the vital economy. (We illustrate this point by referring to the query contained in all applications. Has the party had any disease of the

liver or kidneys, dyspepsia, colic, dysentery, hernia, strangury, hæmorrhoids, or any diseases of the abdominal viscera?)

Diseases of the lungs and heart are insidious in their character, but none the less are others in the great catalogue. Many depend upon a series of others and are consequent thereto. We take another question, "Has the party scrofula, rheumatism, gout, dropsy, or any other disease not enumerated hitherto?" No physician will deny that there is a strong tendency to diseases of the heart in acute cases of rheumatism; and the intimate relation between these two important organs should be fully considered in an examination by him.

Each question of the application is an index to the physician in his operations. The general history of the patient in the first question is the entering wedge, and should place him on the alert. The person desiring to be insured is different from the conscript. The latter purposely makes his case look worst. The applicant for insurance can see no flaw in his physical organization. He is *strictly temperate* and will often be offended at the physician, should he presume to lay bare at some unguarded moment

a constitution unfitted as a safe risk for any Life Insurance institution.

In these fast days the first question as to men's habits is as puzzling as medical diagnosis. What constitutes an intemperate drinker? That drinking is confined to no special class, we quote from Dr. Day's report of inmates of Binghampton Inebriate Asylum.

"Out of New York and Brooklyn, 107; from other parts of the State, 83; from Massachusetts, 19; from Pennsylvania, 20; Virginia, 3; Ohio, 19; Indiana, 6; Michigan, 6; District of Columbia, 3; California, 1; Louisiana, 1; Georgia, 2; Minnesota, 1; Kentucky, 2; Missouri, 1; England, 9; Scotland, 3; Ireland, 6; Germany, 1; Canada, 3; West Indies, 1. Of these there were: Clerks, 93; merchants, 82; manufacturers, 4; clergymen, 3; organists, 2; druggists, 6; bankers, 9; dentists, 2; farmers, 16; lawyers, 15; physicians, 10; brewers, 2; telegraph operators, 3; civil engineers, 4; mechanics, 6; printers, 3; students, 5; editors, 2; authors, 3; of saloon-keepers, hotel proprietors, artists, and polishers, 1 each; and of no regular vocation, 28."

This category shows how the class of men who become victims to the fusel-fiend mostly belong

to walks of life wherein intellect and nerve are under constant stress. Even farmers of the more cultivated kind are few. But clerks driven to exhaustion by overwhelming work; lawyers fuddled with the film of cerebral cobwebs that they get to fancy only alcohol can clear away; and writers, too, are plenty. Even physicians could not help themselves, and druggists found their acquaintance with pharmacopœia ineffectual.

On this point insurance companies should classify the risks, all things being equal. The strictly abstemious man should be marked first class, and the gradations should be in proportion to the indulgences, as seen and known of the insured.

Dr. Day thus ably and exhaustively epitomizes the two principal forms of development in which the drinking of ardent beverages are manifested:

The term *dipsomania* is applied by certain writers on diseases of the mind, to a peculiar form of insanity. The term is intended to designate and describe that impulse towards the use of intoxicating liquors, which is known to arise suddenly in some persons at periods removed from each other, in contradistinction to that craving which is established gradually

through the influence of habit, and which continues with unbroken and undisturbed regularity. This kind of insanity becomes as truly a malady as any other form, but the impulse now referred to has been regarded as a malady from the beginning. The daily drinker has deliberately cultivated his propensity until it has gained complete ascendancy over him, and his unconquerable longings were originally the growth of that will over which they now hold undisputed sway. But the victim of *dipsomania*, from a condition of complete sobriety, is hurried into excesses of a most fearful character, with the full consciousness of the foul debasement before him, which, in his own despite, he is unresistingly impelled to encounter. You know the intensity of that craving for stimulants which all drinking men experience after a protracted debauch. Such in kind and degree is the craving which takes possession of the individual we characterize as the victim of *dipsomania* before his lips have been polluted, or his system poisoned by alcoholic stimulants, and while yet in a state of perfect physical sobriety. This condition of disease is by no means rare. Many such cases are reported in the medical journals of France, Germany, and England. Men of experience in

this country have reported similar cases, and certainly more than a thousand have come under my own observation. There are gentlemen before me who have been subject to this insane impulse towards intoxicating drinks. I cannot say that I am familiar with a case in which this impulse has not been at some period of life awakened, and perhaps fastened by a moderate use of stimulants. I am not entirely certain on that point. But I do know of affections of this sort where the exciting causes may be either some physical uneasiness or some condition of mental depression. Those persons who are liable to nervous excitement seem to be especially predisposed to it. It may, therefore, be connected with temperament and constitution, and in some instances it has seemed to be hereditary. The paroxysm has been known to burst forth with irresistible violence after a period of irritation and anxiety wholly indescribable, and intoxicating fluids of every description are poured down with an eagerness bordering on madness, till insensibility ensues.

The chronic form has often causes more remote than continuous, under the action of which the passion for stimulants amounts to a *mania*, seemingly irresistible and incurable. These

causes are either idiopathic, or are induced by habits or manner of life. Among these may be mentioned a mental constitution unbalanced in its moral faculties; congenital physical weakness, resulting in a morbid tendency to melancholy; a weak individuality, and a disposition easy, good-natured, and social. The disease is frequently induced by misfortune, which darkens and embitters life; or by contrary successes, which unduly excite the mind. The miserable, the irresolute, the listless, the unoccupied, and those too much burdened with care or labor, are the subjects of it.

While the agency of alcohol in large quantities is admitted to be very great in the production of gastric diseases, it is a too general opinion that the regular, habitual use of it in small quantities acts favorably by the gentle stimulation of the digestive functions. The grounds of entertaining this opinion are fallacious; and I agree with Dr. Hodgkins (Copeland, p. 784) in saying that "the habitual employment of such stimuli must be injurious, by blunting the sensibility of the stomach to those articles which are really nutritious, as well as by contaminating, by the admixture of a deleterious

principle, the nutritious juices which the absorbant vessels have to imbibe."

No one will write himself down an inebriate, yet there must be a beginning somewhere, and the medical man is asked the question direct. Does anything in the party's figure, general appearance, manners, or conversation indicate ill health, feeble constitution, irregular or intemperate habits?

1. Of what height? Weight? Girth? and Temperament?

We produce a standard of weights and height as matter for reference. It will appear as a guide in question 1st in Medical Examiner's Certificate.

*Table of the Proper Proportion of the height of
Individuals to their Weight.*

HEIGHT.										WEIGHT.
Ft.	In.									Lbs.
5	1	.	.	.	.	.	.	.	.	120
5	2	.	.	.	.	.	.	.	.	125
5	3	.	.	.	.	.	.	.	.	130
5	4	.	.	.	.	.	.	.	.	135
5	5	.	.	.	.	.	.	.	.	140
5	6	.	.	.	.	.	.	.	.	143
5	7	.	.	.	.	.	.	.	.	145
5	8	.	.	.	.	.	.	.	.	148
5	9	.	.	.	.	.	.	.	.	155
5	10	.	.	.	.	.	.	.	.	160
5	11	.	.	.	.	.	.	.	.	165
6	00	.	.	.	.	.	.	.	.	170

Much stress is laid by some companies on conformity with such tabular statements. Risks are often held in the hands of the company for further consultation, wherein some peculiar deviation is found not altogether up to standard! No greater mistake can be conceived of than this. It virtually binds the examiner's hands and feet. His judgment should certainly have some consideration in every case before him. There are certain families which are long-lived—running back in generations—where great deviations are observable, some of excessive weight,

others deficiently small—then, the above standard taken would be counted altogether abnormal. Yet they live out the full expectation nevertheless.

We have in medical examinations a little more to look to than power of endurance. The scrutiny of the physician is much more comprehensive. It is not a mere question of excess or defect of bony structure, but general physical development, which takes in every organ and function.

A man 5 feet 2 inches in height may go through a campaign with all its fatigues much better than one taller, yet there may be equally as much vital capacity in the latter. The question for the physician to determine is rather this, (in an insurance risk) does the chest formation present a sufficiency in expansion and inspiration to insure a sound pair of lungs? A small man may measure infinitely more around the thorax, and yet be an abnormality, and so otherwise.

It were better to lay less stress upon statistics and take such as mere stepping-stones in the furtherance of a more rigid diagnosis. We conceive it to be an invitation on the part of the company to the examiner to give minute attention to "development" and nothing further.

Next comes the question of "girth." Measuring the chest across the nipples with the arms down.

The applicant must be inspected not with that rigidity of an army inspector, yet insomuch as to be able to discover whether there be any deformities or "gibbosities" which might impair the lung or heart structure. Thus far and no farther is the question of value—all other intentions are mere quicksands, and will mislead and destroy nine-tenths of all risks offered.

Temperament, however, is a more important feature. It mirrors the man. Is he plethoric? we have a guide which will bring us at once to the scrutiny of his bloodvessel system. And we will weigh well Question 3. Has there been any insanity, apoplexy, or any predisposition? And so in each of the four temperaments. Leading up by gradation into the very heart and pith of every species of disease, the nervous, the glandular, the secretory and bloodvessel systems of the human economy.

The question—how much of expansion, which, as a general thing, should be three inches, is a very deceptive guide to the examiner.

The medical examiner should inspect the chest in the infra-clavicular region especially, whether depressed or rounded in the contour of the thorax. The muscular development, whether the

muscles are rigid and respond well to volition or no; whether they are flabby and there is a similarity of development symmetrically. Much may be learned by these minutiae, and taking like ages as a criterion, in proportion as risks come up to a good physical development, just so near will the medical examiner be right in his affirmative or negative answer.

Question 3d on Application. Name in full, occupation and residence of person whose life is to be insured. Seemingly very unimportant, but upon more close scrutiny most valuable in answering Question 11 of Medical Certificate. Question 11 has reference to expectation of life. Expectation is based upon the Carlisle Table, which, for rates of insurance, will answer all purposes, but as a mortuary guide is very unsafe and unsatisfactory. It reduces intelligent opinions of the medical man to mere guess-work. We conceive that the question of occupation has far more to do with the value of the risk proposed and the lease of life, and should take precedence in the medical man's "prognosis."

We give a very careful compilation of statistics prepared by a French physiologist, Mons. Lombard. In comparison we give the Carlisle Table, leaving medical men to draw their own conclusions.

Table showing the Expectation of Life at every Age according to the Observations made at Carlisle.

AGE.	EXPECT.	AGE.	EXPECT.
10 . . .	48.81	40 . . .	27.61
11 . . .	48.04	41 . . .	26.97
12 . . .	47.27	42 . . .	26.34
13 . . .	46.51	43 . . .	25.71
14 . . .	45.75	44 . . .	25.09
15 . . .	45.00	45 . . .	25.46
16 . . .	44.27	46 . . .	23.82
17 . . .	43.57	47 . . .	23.17
18 . . .	42.87	48 . . .	22.50
19 . . .	42.17	49 . . .	21.18
20 . . .	41.16	50 . . .	21.11
21 . . .	40.75	51 . . .	20.39
22 . . .	40.04	52 . . .	19.68
23 . . .	39.31	53 . . .	18.67
24 . . .	38.59	54 . . .	18.23
25 . . .	37.86	55 . . .	17.58
26 . . .	37.14	56 . . .	16.89
27 . . .	36.41	57 . . .	16.21
28 . . .	35.69	58 . . .	15.55
29 . . .	35.00	59 . . .	14.92
30 . . .	34.34	60 . . .	14.34
31 . . .	33.68	61 . . .	13.82
32 . . .	33.03	62 . . .	13.31
33 . . .	32.68	63 . . .	12.71
34 . . .	31.78	64 . . .	12.30
35 . . .	31.00	65 . . .	11.79
36 . . .	30.32	66 . . .	11.17
37 . . .	29.64	67 . . .	10.75
38 . . .	28.95	68 . . .	10.23
39 . . .	28.23	69 . . .	9.70

Lombard's Table, Rate of Mortality in Occupations.

OCCUPATION.	AGE.
Stone Cutter, ...	34
Miller, ...	42
Painter, ...	44
Joiner, ...	49
Butcher, ...	53
Lawyer, ...	51
Surgeon, ...	54
Mason, ...	25
Gardener, ...	60
Merchant, ...	62
Clergyman, ...	63
Magistrate, ...	69
Poet, ...	55½
Statesman, ...	61
Military Commander, ...	59
Philosopher, ...	59
Musician, ...	63
Sculptor, ...	63

The Carlisle Table is a fixed standard; the Lombard Scale, sliding. Is not this more practical? Exposure weighed against the more refining influences of society. We take the mortality of the mason, rated at twenty-five, and compare it with the statesman or either of the others, and what a material difference in the record! The various improvements in ventilation, sewerage, general hygienic principles, daily

becoming more and more common, and the thorough system of public schools educating people up to higher standards of health, must tell with great power upon the mortuary cycle. It tells now. What will it be as society escapes from the slough of old prejudices and sees from an elevated educational stand-point?

We hold that the medical examiner must only give heed to the question in so far as his judgment is based upon correct principles of "hygiene" and only as a guide to farther investigations.

Dr. Guy says, in his work on statistics, "If the sanitary condition of the entire country could be raised to the condition of the most healthy countries, there would be an annual saving of about one-seventh of the number of deaths." The mortality of cities is owing in a measure to crowded dwellings, personal uncleanness, the concentration of unhealthy emanations from narrow streets, without fresh air, water, or sewers. Locality and occupation are so blended together in the risk, that even in the same classification of occupation the grade of the answer must depend one upon the other. No medical man can safely take a risk until the surroundings are well

canvassed, and these should have a great influence on his decision.

In Question 3d of Examination and Questions 8 and 11 of Application we have brought to our notice what are Hereditary Diseases: as a class, they are whatever is transmissible, or constitutional in character, from generation to generation. In this class we would mark consumption, scrofula, some nervous diseases, chorea, epilepsy, cutaneous diseases and syphilitic; and all such as produce themselves *sui generis*.

The question as to family history is correlative and only auxiliary to a future physical exploration. It is a known fact that consumption or any of the hereditary diseases, do not always exhibit themselves in the succeeding generation. The taint may lie dormant and yet be entailed in a future generation; actually skipping over one line of lives and redoubling its violence in the third generation. Thus we account for Question 10. Application; "Please state whether paternal or maternal grandparents, uncles or aunts of the party have died or been afflicted with consumption, insanity, or any hereditary disease?"

Chances of Death by Different Diseases.—Taking the English population in the aggregate the

chance that among the various forms of death the fate which a human being must encounter will be accidental or from injury wilfully inflicted, is nearly as one to 29. The chance that death will be by zymotic disease is as one to 6 ; and the chance that it will be by consumption is nearly as one to 9 ; but, of course, the risk is increased, to some, and, therefore, lessened to others, according to occupation, sex, age, and other circumstances. The following results, showing the proportional number of deaths in England in 1867 from each cause to 1,000,000 deaths from all causes, arranged in the order of their fatality, will enable the chances of death by different diseases to be determined in the above manner : From consumption, 118,003 ; bronchitis, 86,554 ; atrophy and debility, 69,284 ; old age, 61,414 ; convulsions, 56,294 ; heart disease, 46,499 ; pneumonia, 45,275 ; diarrhœa, 42,559 ; typhus, 36,150 ; scarlatina, 26,370 ; hoop-ing-cough, 25,454 ; paralysis, 23,175 ; apoplexy, 22,309 ; premature birth, 19,272 ; cancer, 18,320 ; dropsy, 15,112 ; hydrocephalus, 15,095 ; tabes mesenterica, 14,754 ; fracture and contusions (accident), 14,141 ; measles, 14,124 ; brain disease, 12,158 ; liver disease, 11,859 ; lung disease, 10,278 ; croup, 9405 ; teeth, 9219 ; cephalitis,

9047; asthma, 8035; sudden death cause unascertained, 7516; stomach disease, 6320; scrofula, 6299; kidney disease, 6260; enteritis, 6127; drowning (accident), 5737; burns and scalds (accident), 5574; diphtheria, 5574; smallpox, 5388; childbirth, 5029; epilepsy, 4957; rheumatism, 4837; nephria, 4723; syphilis, 3641; joint disease, 3584; peritonitis, 3368; jaundice, 3201; erysipelas, 3109; want of breast milk, 3080; suffocation (accident), 2899; mortification, 2849; hepatitis, 2828; laryngitis, 2755; ileus, 2528; thrush, 2493; accident not specified, 2393; uterus disease, 2291; metria, 2285; dysentery, 2062; ulceration of intestines, 1990; hernia, 1987; cholera, 1977; pleurisy, 1854; gastritis, 1591; ascites, 1552; diabetes, 1458; insanity, 1372; influenza, 1301; pericarditis, 1269; malformations, 1081; aneurism, 1078; hanging (suicide), 1046; cyanosis, 1031; purpura and scurvy, 1010; ulcer, 950; nephritis, 948; phlegmon, 922; murder and manslaughter, 840; spina bifida, 832; cystitis, 817; gout, 808; intemperance, 802; delirium tremens, 791; skin, 776; violent deaths not specified, 641; introsusception, 635; poison (accident), 602; stricture of intestines, 596; cut or stab (suicide), 575; ovarian dropsy, 530; carbuncle, 504; drowning (suicide), 489; stone, 431;

quinsy, 431; stricture of urethra, 422; noma, 373; worms, 369; suicide (means not stated), 300; poison (suicide), 289; gunshot (accident), 266; ague, 259; pavamenia, 247; privation, 234; ischuria, 227; zymotic diseases not specified, 225; cut or stab (accident), 221; fistula, 214; spleen, 199; remittent fever, 184; arthritis, 161; gunshot (suicide), 122; chorea, 107; pancreas disease, 39; hanging (execution), 24; hydrophobia, 21; glanders, 9. Out of every 1000 deaths, 195 were caused by zymotic diseases, 192 by constitutional diseases, 402 by local diseases, 167 by developmental diseases, and 36 by accidental and other violence.—*N. Y. Underwriter.*

Question 4. Has the party had local or general paralysis, apoplexy, epilepsy, or other diseases having their seat in the brain or nervous system, or any predisposition thereto? We have in measure met these points in former articles on hereditary diseases. Much will depend upon general inspection in such cases, and the study of temperament and the dynamic forces of the system, as displayed in muscles controlling locomotion and speech. These will tell as to the peculiar tendencies of the applicant. In females many of these diseases are hysterical, and on the removal of the cause the disease sub-

sides. As we find a difference exists in the sex; and while a negative answer may be given to the application, in case of a male, in the female it should be suspended or postponed, not absolutely rejected. Where there is vertigo, with constant headaches, the subject having a short neck, with the head lying low between the shoulders; and where there is a general plethora, with a sluggish pulse, full and bounding under the fingers, with a prior short family history on the part of both parents, one or other dying of apoplexy, the application may be at once rejected.

The whole cerebro-spinal system is the subject of study, and any deviations from normal standard should be carefully noted. Tenderness along the spinal column, or any want of response in the cranial nerves, whether of the eye, ear, or gustatory apparatus, should be a caution to the examiner, and he will proceed as if there were breakers ahead. Should the nervous system be involved sympathetically (and much in individuals depends upon "anemia"), the physician might suggest a toning of the system by chalybeates, etc., and postpone the examination until an improvement may be observable. This is due to both parties. If, however, on a second

examination, evidences of a dyscrasia still exist, it would be prudent not to take the risk. The consequences of prolonged anemia lead to practical disturbances too serious to assume the responsibilities. When paralysis pictonum exists and is evidenced by the blue line about the gums (in painters a disease amenable to treatment), a proper course of regimen being suggested after a sufficient lapse of time, the risk may be accepted, evidence existing that the lead poison has been eradicated. Of course this would come under a different classification as to character of risks and corresponding rates. Should the medical examiner hesitate, it were well for him to submit the case with full details to the general office for final adjudication. Delirium tremens and abuse of opium and tobacco are grave subjects for the medical examiner.

The Effects of Tobacco on Boys.—Dr. Decasine, in the course of investigations on the influence of tobacco on the circulation, has been struck with the number of boys, aged from nine to fifteen, who smoke, and has been led to inquire into the connection of this habit with impairment of the general health. He has observed thirty-eight boys, aged from nine to fifteen, who smoked more or less. Of these, distinct symptoms were

present in twenty-seven. In twenty-two there were various disorders of the circulation—*bruit de soufflet* in the neck, palpitation, disorders of digestion, slowness of intellect, and a more or less marked taste for strong drinks. In three the pulse was intermittent.

In eight there was found on examination more or less marked diminution of the red corpuscles; in twelve there was rather frequent epistaxis; ten had disturbed sleep; and four had slight ulcerations of the mucous membranes of the mouth, which disappeared on ceasing from the use of tobacco for some days. In children who were very well nourished, the disorder was, in general, less marked. As to the ages, eight of the boys were from nine to twelve years old; nineteen from twelve to fifteen. The duration of the habit of smoking was, in eleven, from six months to a year, and in sixteen more than two years. The ordinary treatment of anæmia in general produced no effect as long as the smoking was continued; but when this was desisted from, health was soon perfectly restored, if there was no organic disease.—*British Medical Journal*.

The general appearance of the individual must be the guide in his final decision. Where an individual has had one attack of mania-a-potu, the

probability is that the brain and nervous system have received so great an injury as to predicate great trouble in the future. While there are exceptional cases and reforms, as a general thing these are scarce and far between. It is good policy to reject, where the statement of the above facts appears or is elicited by examination. The same may be said with similar abuses in tobacco and other noxious weeds.

Question 5, of certificate, opens thus: "Has the party ever spit blood, or been subject to cough, profuse expectoration, difficulty in breathing, or any other disease of the lungs?" This devolves upon the applicant to answer. Information thus gained is introductory to question 6. Are the lungs in a perfectly healthy condition? Is the respiration full, gentle, and regular? Does percussion give a normal resonance?

This brings us into the field of exploration of lung tissue, and here we conceive to be the real responsibility of the medical examiner.

Diseases of the lungs are recognized by certain local and constitutional symptoms which take hold of the lung life or vital capacity; the external physical signs localize the variations from health in the lung tissue. Hence in forming a judgment of health or disease, we combine both;

laying stress upon sounds, while we do not forget "the vital symptoms in cough expectoration, analysis of sputa, dilatations of bronchi," &c. &c.

It requires a general knowledge on the part of the examiner, a mere superficial exploration will not do; the medical man must make clean work, as he advances.

First, then, what does a healthy lung reveal? Certain unmistakable sounds, the absence of which should excite suspicion or alarm. These are ascertained by percussion and auscultation.

Percussion develops clearness or dulness in healthy or diseased lung tissue, and circumscribes them to particular regions, which for convenience' sake have been divided into fixed localities. Auscultation gives sounds peculiar to health, in contradistinction to those of disease.

"Sounds of Respiration" are vesicular, puerile, tubal. Disease modifies these, and we have "Rattles," moist or dry, cavernous or otherwise, during every act of respiration. Vocal vibrations, sonorous or sibilant, and friction sounds, each conveys a meaning full of import to the medical man, favorable or otherwise to the acceptance or rejection of the case in hand. Hence the importance of having a practised ear, able to detect the least deviation in resonance! Espe-

cially where the special functions of the lungs are in issue!

What constitutes a healthy lung, and how shall we ascertain the fact by the various appliances—palpation, percussion, measurement, succussion, and auscultation?

Here we assume the comparative side of the question, having already entered into the details of height, weight, temperament, locality, and the incidents thereto in the development of disease or furtherance of health.

How does the applicant approach the health standard?

In the first place, the bony thoracic cavity should be well developed and symmetrical; the expirations and inspirations full, gentle, and regular. The play of the lungs should not be impeded by false attachments, and the general rotundity of the chest should be uniform on each side throughout.

Does the chest expand uniformly and regularly on both sides? To test uniformity and regularity, we give Hutchinson's Table.

RESPIROMETER TABLE—"HUTCHINSON'S."

HEIGHT.				From obser- vation.	Regular pro- gression.
				Cubic inches.	Cubic inches.
5 ft.	—	5 ft. 1 in.		174	174
5 " 1 in.	—	5 " 2 "		177	182
5 " 2 "	—	5 " 3 "		189	190
5 " 3 "	—	5 " 4 "		193	198
5 " 4 "	—	5 " 5 "		201	206
5 " 5 "	—	5 " 6 "		214	214
5 " 6 "	—	5 " 7 "		229	222
5 " 7 "	—	5 " 8 "		228	230
5 " 8 "	—	5 " 9 "		237	238
5 " 9 "	—	5 " 10 "		246	246
5 " 10 "	—	5 " 11 "		248	254
5 " 11 "	—	6 "		259	262

To the question, How many inspirations per minute, we give the following table as a guide:—

QUETELET'S TABLE.

AGE.	INSPIRATION.		
	Average.	Max.	Min.
At birth, ...	44	70	23
5 years, ...	26	32	—
15 to 20, ...	20	24	16
20 to 24, ...	18.7	24	14
25 to 30, ...	16	21	15
30 to 50, ...	18.1	23	11

Provost and Dumas place the ratio of respirations to pulsation as 1 to 4.

D. C. Hooker, of Boston, says any deviation from this relation (1 to $4\frac{1}{2}$) indicates some mechanical or structural impediment to the free play of the lungs.

Where such deviation occurs, the medical examiner should pause and seek information from the family history. It may tend to discover or remind the applicant of some question carelessly answered or overlooked by him.

So much for discoveries by palpation, inspiration and expiration, and general exterior of lung structure. The position we assume is, that in all these details it is incumbent upon the medical men to be conversant, and to assume that each examiner, to do his duty, should give each and every point, whether small or great, a careful supervision.

It must be borne in mind that in Diseases of the Lungs the examiner has to do with "chronic cases;" and evidences deducible from physical and vital signs in early stages are not so easy of detection as in the acute—phthisis excepted.

We have to do with relics of prior diseases, and it is for the physician to say whether, if there be unsoundness, there be sufficient to pronounce the risk impaired and unfitted to be accepted. To assume that the least departure from health

is basis for rejection, is too sweeping. The objections should be vital.

In the outstart of an examination, to the question, Had you disease of the lungs? the applicant may answer, as he often does, "I have had a cold; it was trifling, however, and did not preclude me from following my business." To be satisfied with this alone, the examiner would be thrown off his guard. It behooves him to press his inquiries with minuteness. Whether there was fever with the cold? Whether there was expectoration, color, and consistence? Whether there was pain in any portion of the chest? Whether there was loss of voice, &c.? He should look for marks of pustulation or vesication in the thorax; these will indicate the extent of the cold! How, otherwise, will he be able to locate the disease understandingly?

Cold, or catarrh, is another name for bronchitis. It applies to any grade of inflammation of the mucous membrane, from the nostrils downwards to the lung tissue. Percussion reveals little; auscultation much. In these cases, "rattles" have different sounds, at first dry; as the disease advances, moist mingled with dry; the respiratory murmur weakened, where diseased in smaller vessels, sibilant rattles predominating.

The natural gradation of respiratory murmur in young children (say until three years), the respiration is much louder than in the adult, and is called "puerile;" in old persons it is weaker. If these respective sounds be misplaced, there is evidence of mischief.

Dry rattles are produced by congestion and thickening of mucous membrane; as suppuration supervenes the rattles become moist. Where the disease involves the large bronchia, the rattle is sonorous.

 Disease of the heart is frequently disguised in bronchial symptoms. Where cutaneous disease exists and bronchial trouble shows itself, the medical examiner, looking for the predisposition to "metastasis," should guard carefully the sounds and functions of the heart.

Irregular distribution of blood in the lungs by improper action of valves of the heart, predisposing to passive congestions, frequently develop bronchial and kindred diseases.

Another important point is the character of vocal resonance.

Pneumonia concerns the parenchymatous structure, the inflammation distributing itself into the lobe structure. What have been the effects of such disintegration? Percussion will

reveal differences of sound in the base, and resonance be increased or diminished in proportion as the lungs are consolidated, air cells blocked up, or the lung capable of ready inflation. Differences in this respect will grade the nature of disease.

Friction sounds show pleuritic attachments. Whenever the pulmonary sounds become flatter, or are altogether superseded, or where they acquire increased sonorousness or clearness, you may rely upon it, there is diseased structure.

We give a table for reference. It will be a good guide in medical examinations in the several important points at issue.

TABLE INDICATING DISEASE OF LUNGS.

SOUNDS.	RELATIVE TO INSPIRATION AND EXPIRATION.	DISEASE ASSOCIATED WITH.
Mucous rattle.	Coexisting with both.	Bronchitis after secretion has been established.
Submucous.	Predominating in inspiration.	Capillary Bronchitis.
Cavernous.	Coexisting with both acts.	Vomica in Phthisis. Dilatation of Bronchitis.
Humid crackling.	More distinct in inspiration.	Softening in tubercles.
Dry crackling.	Exclusively in inspiration.	Softening.
Crepitation or Rhonchus.	Coexisting in inspiration.	Pneumonia.
Secondary Crepitation.	Coexisting in both.	Pneumonia.
Sonorous rattles.	Inspiration and expiration.	Bronchitis.
Friction sounds.	In both acts.	Pleurisy.

Sounds in health, in all cases, should correspond on both sides. Variations in either are suspicious. Placing each in juxtaposition, the medical examiner has a ready method of detection, as cases correspond with the above standard of disease, and should, in connection with the vital signs as revealed by sputa, &c., have no difficulty in giving a decided opinion.

Question 5 of examination, and 12 of application. Did the applicant spit blood? A common error has crept into companies to totally discard "blood-spitters," "*ipso facto*;" and hasty judgments have been formed as to the evidence of Phthisis on this ground alone. We should, in such cases, ascertain the facts in each individual case. A true hemorrhage is the raising of blood only. In Pneumonia we have "rusty colored sputa." The applicant, ignorant of the distinction, frequently calls this spitting of blood, and fatally prejudices his case. The medical examiner should inquire how the blood was ejected? Whether by act of vomiting? Whether by hawking? Whether slowly or rapidly? The color, odor, and taste? Each one is an index of paramount importance towards forming a rational opinion. When the patient's form, general appearance, slight frame, and short dry cough, indicate a debilitated constitution, and there have been predispositions to hemorrhage in early life, either by bleeding from the nose, or slight ejections of blood from the throat spontaneously, we may well fear such an history. In such cases the examination should be very minute; and when the applicant is under 35, with

a scrofulous diathesis, it will be good policy to reject him.

In a case of an applicant, the following answer was elicited to the question, Did you spit blood? He replied, "Yes, about two years ago." "How much?" "About a teaspoonful." The application went to the home office for approval, when the cautious president declined it with these words: "Before we take 'blood spitters,' we wish a more minute history of their case." The company rejected. Hence, in this point it is imperative that examiners should enter fully into the details in the case.

Pathologists differ in the pathognomonic signs of hemorrhage. Some assert, as Louis, that in all cases we must suspect tubercles. Rokitansky says, "Tuberculized growths appear to be peculiarly liable to inflammation; tubercle being wont to set up reactive processes of inflammation everywhere in its circumference. In this way the hemorrhagic inflammatory process often concurs with local tuberculosis without depending upon tuberculous crasis. That tuberculosis acts as a source of hemorrhagic effusion is rendered probable by experience, but it is *by no means proved*."

Mons. Andral says: "More than one-fifth of

the cases of hæmoptysis are not tuberculous; that is, are not dependent on or associated with tubercles." Dr. Ware, in 386 cases, reports 62 recovered. These lived in ordinary health, and died of disease having no connection with the existence of tubercles. The length of time during which immunity occurred varied from two to thirty-seven years. "These facts," says he, "show that neither the existence of tuberculosis nor a strong proclivity thereto, is to be positively predicated in pulmonary hemorrhage."

George B. Wood, M. D., says: "Though unable to produce statistics upon this point, I am disposed to believe, as the result of observation, that independently of menstrual derangement, more cases of hemorrhage from the lungs occur without tubercles than with."

Bleeding from the lungs is relatively in some cases conservative, as in vicarious discharges. Here they assume other channels, until nature resumes its first order. Then, again, there are hyperæmic and anæmic conditions of the system, in which we have such symptomatic developments. It is for the examiner to say how much they invalidate the risk offered.

Taking these views "pro and con," the medical examiner is to bring to bear every available

resource. Measurement, expansion and inflation, whether applicant has lost or is losing flesh? Cough, if any? Expectoration, if any? Periods of, if any? Vocal resonance? Character of sounds in different regions—Pain in chest, if any? Frequency—intervals between? Age of occurrence? General physique? Each and all of these will lead the examiner to a ready and safe conclusion. While he may not find all of these pathognomonic signs, it will be incipient and lead him to lay bare “some seeds” of disease, at any moment ready for development, and in no case should he accept the risk where the least suspicion exists of hereditary taint or “implied tubercles.”

In the same category comes bleeding from the nose, stomach, pulmonary apoplexy, &c.

The medical man must judge in how far these will impair the character of the risk offered. A medical examination is a study of cause and effect, balancing each, with the additional lights furnished by science and whatever elevates to a healthy standard or depresses below.

Questions 7 and 8 of certificate read thus:—

Has the party ever suffered from palpitation, fluttering pain, or other inconvenience in region of heart? Rate and general character of the

pulse. Are the rhythm and impulse of the heart healthy?

To the medical man with enlarged views as to his duty, these interrogatories involve more than mere examination of heart's action. They incorporate the whole circulating and blood-making system; lymphatics, lacteals, veins, arteries, processes of chymification, chyification, and character of blood itself, for all these are blended in the heart as an organ. A knowledge of these and the great sympathetic ganglia controlling the functions of these organs, will enable the physician to distinguish between health and disease.

Percussion will define location of organ; it should be "obliquely in chest, the base being directed upwards and backwards or towards the right shoulder, and the apex forwards and to the left, pointing to the space between the fifth and sixth ribs," two or three inches to the left of the sternum. The shock communicated to the finger or hand applied to the surface or heard by the ear, is what is termed the "impulse" of the heart. "Rhythm" is applied to motions of heart and the several sounds in dilatation and contraction. Writers give us the following ratio of proportions as to time, dividing the sounds into "fifths:" First sound, 2-5th; second, 1-5th; interval, 2-5th.

In health, the time occupied by whole should correspond with time occupied between one stroke of pulse and another. Healthy persons in examination present clear and smooth sounds, as placid and undisturbed as the breathings of an infant asleep. The sound heard is none other than normal action of heart in its blood-supplying process. But when there is a heaving, bellows sound, we have indications of disease; and these sounds vary in proportion as incipient or advanced.

The healthy sounds of the heart have defined limits; we look for them *over* the præcordial region. Sounds out of these limits indicate enlargement, and will be accompanied by other morbid evidences in the veins and arteries supplying the organ of circulation. Morbid sounds are styled "Murmurs" or "*Bruits*;" they assume names to characterize the distinctive relations of each. We have the *Bruit de Soufflet*, "bellows sound," "*Bruit de Rape*," "rasping sound," "*Bruit*" or musical sound, and friction sounds or "pericardial;" each "endocardial or exocardial," as the substance or contiguous parts to the heart are concerned. Some writers give us eight varieties of sound not heard in health,

owing either to constriction or dilatation of the organs or vessels furnishing the blood.

The forms of regurgitation by thickened valves, as seen, and felt in the thrill in the arteries, are all causes which should lead the physician to suspect disease, and act accordingly. This shows the necessity of following up the course of arterial and venous system, when the valves of the organ are in anywise roughened and give the peculiar "Bruit" showing contractions in their orifices.

Dyspnœa, pain, and the color of the individual are not to be overlooked. The bulging of the eyeballs and livid character of the tongue—and in adults advanced in life, the arcus senilis—must be heeded as guides where other sounds of the heart and diagnostal symptoms fail in producing evidences as to the organ's normal condition.

It must be borne in mind that these sounds of the heart existing, they are not in themselves sufficient evidence that the risk is not a good one; they are often present, and yet may be simply functional, owing to disturbances of the great sympathetic ganglia which reach out and operate on the whole processes of assimilation in the human economy. This is illustrated by

effects of fright, fear, sudden emotion of any kind upon the circulation. Palpitation, syncope, and sudden death follow, without any material or abnormal condition of the central organ of the bloodvessel system. When the medical examiner is led to believe that "murmurs" heard have little relation to organic disease and are functional in character, he should ask the time of day in which these apparently morbid conditions are most manifest; whether before or after meals; whether there be any difference, whether after a hearty meal or when abstemious; the personal habits of the individual, if he have any vices, &c. &c.

If, after the light thrown upon this condition, there be any amelioration, it is the duty of the physician to give the doubt in favor of the examined, and accept; if he hesitates, to postpone for re-examination, and not summarily reject. The examined has rights, and his case should not be prejudiced by too much haste, even though sounds differing somewhat from health should be heard. Simulated cardiac troubles are often caused by engorgement of viscera and blood-vessel or blood-forming system.

We have adverted to anemia and hyperæmia; these come under the same category! The se-

quela of scarlatina, measles, diphtheria, resulting in albuminuria and cardiac accumulations, should be inquired into. Rheumatism and gout, with neuralgia of heart, should there have been these in family record, are causes for a rigid examination. Great circumspection is necessary on these points, not only in regional examination of the heart, but general examination of urine and the general secretory organs concerned.

It will not be necessary to direct the medical examiner as to character and kinds of pulse, only to say that too much reliance on the pulse is fallacious. While a pulse too slow or too rapid may be cause to hesitate, there are personal idiosyncrasies where these exist, and yet the heart is perfectly healthy.

The tongue, pulse, and general appearance of patient are only guides. The medical man's knowledge must carry him through "cause and effect," and after each has been studied, he can then alone render a true opinion.

Question 9—Has the party had any disease of the liver or kidneys, dyspepsia, colic, dysentery, hernia, strangury, or other disease of the abdominal viscera? If so, state particulars.

Question 10—Has the party had scrofula, rheumatism, gout, dropsy, or other disease not

enumerated, or any mechanical injury? If so, state particulars.

The medical man's attention in the first series of questions is directed particularly to the viscera—to functional derangements, inflammatory and mechanical. It is for him to say whether the dyspeptic is so far gone as to be precluded, or whether he will by care pass through the allotted time of life. Physicians well know that despondency in this disease is much the greater evil; and a proper course of regimen and diet will carry the applicant along to his expectation, all things being equal.

Should he have jaundice, or his liver, spleen, and kidneys suffer from frequent attacks of intermittent; or being of a bilious temperament, the liver, the weak organ of the system, it were well to make a note of the same, and submit all particulars to the company for final decision.

In all suspected diseases of the liver, the applicant should be examined in the recumbent position, with the limbs drawn up. Pressure in region of liver will detect the least evidence of disease. Dropsy originating from disease of the liver, independent of the heart—a distinction may be entered in this case, and should be submitted to the company for determination and fuller in-

structions. The applicant should not be cut off altogether.

Scrofula, rheumatism, and gout have already been mentioned. Where rheumatism has seriously impaired the heart, and it is acute in character, there is no necessity of progressing in an examination. Where it is muscular, as in "pleurodynia," and may be occasioned by sudden exposure, and disappears without leaving a trace behind (as often occurs), in such cases it would be perfectly legitimate to accept the risk.

Diseases of the kidneys—in diabetes, for instance—no prudent man should hesitate for a moment. Where evidences exist in the urine, and calculi are passed in micturition, with a gouty diathesis, also reject. Some persons are apt to be loose in their terms, and style the least deviation from nature in the urinary organs "disease"—viz., a suspension of urine or "pain in the kidneys." This is misleading the examiner, as he well knows certain kinds of food may produce these consequences, and traces be seen in the urine itself, without impairing the organ or showing any inflammatory or disintegrating action in the secreting power of the kidneys.

Hernia is a serious trouble, owing to incarceration and its consequences. Here the medical

examiner should be cautious. On all occasions where the bowel is reducible, a well adjusted truss should be ordered; *and the policy should have a restriction, in which the risk would only hold good, this precaution being followed out.* A mere direction of the physician in the case is a “nullity;” policies in such cases *should be “special,”* aside from all others.

In diseases not enumerated, we would advert to “fistula in ano.” Where this exists, the patient’s whole system should be thoroughly canvassed. Hereditary taints will often show themselves in family history. If, however, the physical organization be good, no cough or appearance of tubercles in a rigid examination, no decrease of weight and no inconvenience, the discharge operating as a “conservative,” the case should be submitted to the company for further investigation. On no account should the medical examiner be hasty in his conclusions, none of the indices of dyscrasia existing.

Asthma and emphysema are special subjects for “home office,” especially the former; when locality, occupation, &c., may be ameliorating circumstances, guiding the decision of the officers.

Hæmorrhoids, whether bleeding or no, and the injuries to the constitution or the reparative effects of same, require careful scrutiny on the part of examiner. Prolapsus of rectum, indicating a deficient nervous power, is cause for rejection. Stricture of the bowels and urethra, enlargement of prostate gland, diseases which may exist for years, but which are aggravated by inflammations at any moment, putting in jeopardy the life of applicant, should be cause for rejection.

Frequent attacks of diarrhœa, or dysentery and colic, should place the examiner on the alert, and make him cautious in his acceptance of such risks. Rejection, even though the applicant appear sound, would be better policy than acceptance.

This brings us to a conclusion of the questions on application. We have reviewed the points at issue, and believe have succeeded in according to the medical examiner *a very important* position among insurance officers. Is he fairly compensated for his weighty responsibility? He is subject to numberless inconveniences; and we submit to companies whether the present method of remuneration is not too narrow, and the method fraught with danger to the

companies represented. Would it not be better to impress upon him his *great importance and responsibility*, and elevate him in the interests of the company, to a standard equal with the financial managers?

We here add, as in place, the following from an address issued by a certain well-known company:—

“Information as to the health of the individual can only be obtained from the insured. He is asked certain questions. Upon his answers the companies base their action. They ask what their experience and knowledge have taught them is material. The insured is always specially notified that upon the absolute truth of his answers depends the validity of his policy. Upon this basis the contract is made. If the answers are untrue, the basis of the company’s calculations fails. The proportion of deaths in a given time is greater than was expected; the company cannot pay its losses, and insolvency and ruin are the result. Who suffers the loss? Not the officers, for they have their salary; not the stockholders, for there are none, the company being mutual; but the policy holders who have told the truth in their applications must suffer.”

In an every-day practice to have but an hour

to spare at an insurance office, and be expected to pass on the merits of half a dozen or more cases, when, as will be perceived, to do his duty and review one case might require as many hours, is it a wonder that so many cases are passed as coming up to expectation, that die years before the time, especially when the merits of the case have to be so summarily dealt with? We submit it to these institutions whether a reform in this quarter is not as essential as an actuarial calculation on prospects of longevity and means to enhance the interests of companies in computing new tables and rates. It is all well that companies should be prudently managed; no one of the insured will find fault with that. Yet it is to the interest of every company that their medical examiner should be chosen "from among the best of men," and paid in proportion to his responsibility.

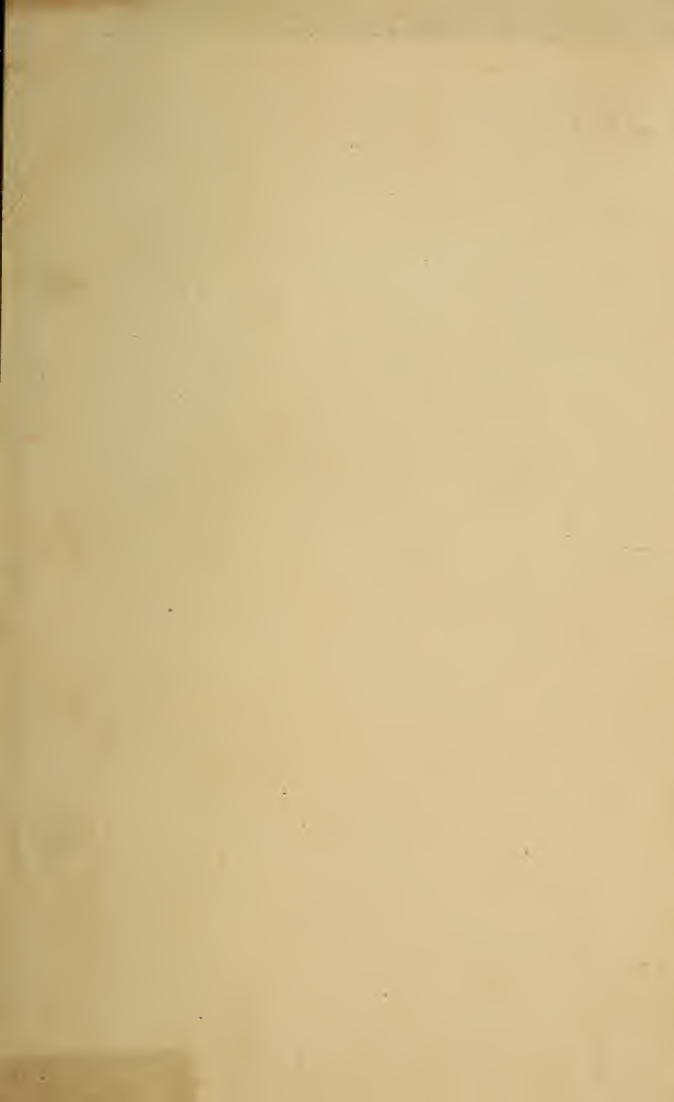
The medical man stands between the insured and the company. Shall he be able to sift a case as hurriedly as we have shown, should be the case in large offices, where we have it advertised "The medical man stays but one hour per day." The whole thing *bears absurdity* in its face, and *needs a thorough reformation*.

Another question material in every examination is "identity." Every company should demand a *photograph* of the *insured*. In the case lately decided in court, how easily a substitution could have been effected! The resemblance to the individual would have been a check, and brought to mind to the examiner the substitute and the original. A case recently occurred in one of our western cities where a deception was practised upon companies involving \$30,000.

Each examination should be strictly confidential, and only between the company and the examiner himself, exclusively of the agent furnishing the risk. There should be no knowledge as to result of examination until the decision is reached from the office.

We have now brought our labors to a close. If in the course of this work we have been useful in guiding companies to a more rigid inquiry into the character of its examiners, we have succeeded. We know skilful medical men need no invitation to more scrutiny in their cases, yet we cannot see how, under the circumstances, it can be expected from them, with their time otherwise occupied in professional duties, that they can always give a wise conclusion. Let the medical man be sustained, as he richly deserves, and the

longevity of the risks will be proportionally increased. If, however, companies will pursue a narrow course, it is for the applicant to choose between those who are, and those who are not, "penny wise and pound foolish."



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